

September 23, 1998. Applicant respectfully requests the Examiner to acknowledge having considered claims 144-147 in view of Zdeblick '909.

In the Office Action, the Examiner rejected claims 1-9, 11-25, and 28-144 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,458,638 ('638) to Kuslich in view of Kuslich '638. Claims 145-147 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Kuslich '638 in view of Kuslich '638 and further in view of U.S. Patent No. 4,878,915 to Brantigan.

Independent claim 1, as now amended recites an implant with a thread having an outer locus that is frusto-conical "along at least a portion of the length of said implant nearer said trailing end than said insertion end." Independent claims 25, and 69, and dependent claim 2 which depends from claim 1, as now amended, are directed to an implant having a body that is frusto-conical "along a sufficient portion of said implant that is adapted to contact the adjacent vertebral bodies when implanted in the spine so as to maintain an angulation of the adjacent vertebral bodies relative to one another." Independent claim 108, as now amended is directed to an implant having arcuate portions in a diverging relationship to one another "along a sufficient portion of the length of said body adapted to be placed in contact with the adjacent vertebral bodies sufficient to maintain angulation of the vertebral bodies."

Contrary to the Examiner's assertion, Kuslich '638 at Fig. 2A does not teach a "frusto-conical shape spinal implant" as claimed by applicant. Kuslich '638 also does not teach a spinal implant with a thread having an outer locus that is frusto-conical along at least a portion of the length of the implant nearer the trailing end than the insertion end. Instead, Kuslich discloses a threaded cylindrical implant wherein:

"threading 26, 28 (see Fig. 2) adjacent leading end 14 is tapered as shown by angle A<sub>1</sub> (which is preferably about 15°, see FIG. 2). Away from the tapered end 14, and adjacent the trailing end 16, the threads 26, 28 present flat,

annular surfaces 30 which are in alignment and parallel to shell 22.

Accordingly, the thread profile presents a generally bullet-shaped profile which is cylindrical along the majority of the body 12 and tapers inwardly toward axis X-X at the leading end 14.” (Kuslich ‘638, Col. 4, lines 21-29) (Emphasis added).

As shown in Fig. 2A of Kuslich ‘638, “leading end 14’ includes a sharp point 15’ to better assist the insertion and advancement of the body 12’ into the intervertebral space.” (Kuslich ‘638, Col. 7, lines 37-40). The Kuslich ‘638 implant does not have a substantially frusto-conical configuration along a sufficient portion of the implant that is adapted to contact the adjacent vertebral bodies when implanted so as to maintain an angulation of the adjacent vertebral bodies relative to one another.

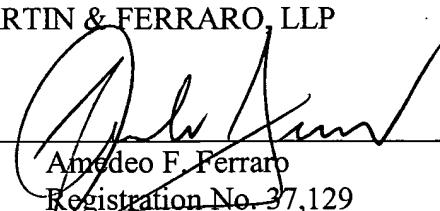
Kuslich ‘638 further does not teach a cylindrical threaded implant having a truncated side forming a planar surface parallel to the central axis of the implant as recited in independent claim 49. Instead, Figures 14 and 15 of Kuslich ‘638 show an implant having a “body portion 122...which is generally oval-shaped in cross section.” (Kuslich ‘638, Col. 8, lines 41-43).

Independent claim 144 is directed to a device for facilitating arthrodesis with a “body having an outer surface that is substantially continuously tapered from said first end to said second end.” No such structure is taught, disclosed, or suggested by Kuslich ‘638 or Brantigan ‘915.

Applicant submits that Kuslich does not anticipate, teach, or suggest, applicant’s claimed invention in independent claims 1, 49, 69, 108, and 144 or claims dependent therefrom. Accordingly, the rejection of claims 1-9, 11-25, and 28-144 under 35 U.S.C. § 103(a) as being unpatentable over Kuslich ‘638 in view of Kuslich ‘638 and the rejection of claims 145-147 under 35 U.S.C. § 103(a) over Kuslich ‘638 in view of Kuslich ‘638 and further in view of Brantigan have been overcome.

If there are any fees due in connection with the filing of this response, please charge our Deposit Account Number 50-1066. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for in the papers accompanying this response, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,  
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